

DART AEROSPACE LTD	Work Order:	13967
Description: Crosstube Extrusion (206B)	Part Number:	D6003-102
Drawing: D6003 Rev. A	Qty:	15

Step	Location	Procedure	By	Date	qty
1	EXPEDITING	Open W/O	U	0508.05	15
2	PURCHASING	Issue P/O: <u>2008420</u> a) Extrude as per Dwg D6003 b) Material: 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) seamless aluminum tube c) Minimum ultimate tensile strength = 77 ksi d) Minimum tensile yield strength = 66 ksi g) Material certification required	CL	0508.05	15
3	RECEIVING	Receive and Inspect for transit damage Ensure Material certification is attached	CL	05/10/31	18
4	QC	Inspect Level 6 Ensure Ensure Material certification comply to Dwg D6003	J	05011.00	18
5	FINISHING	Chemical conversion coat as per QSI 005 4.1	U/A		
6	STORES	Identify and Stock	CL	07/12/04	18
7	EXPEDITING	Close W/O Cost / part	D	07/12/01	18

RF
03.06.05

2 left

Rev	Date	Change	Revised By	Approved
A	00.11.21	New Issue	EC	
B	00.12.06	Added: Issue P/O	EC	

RELEASED

02.02.07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

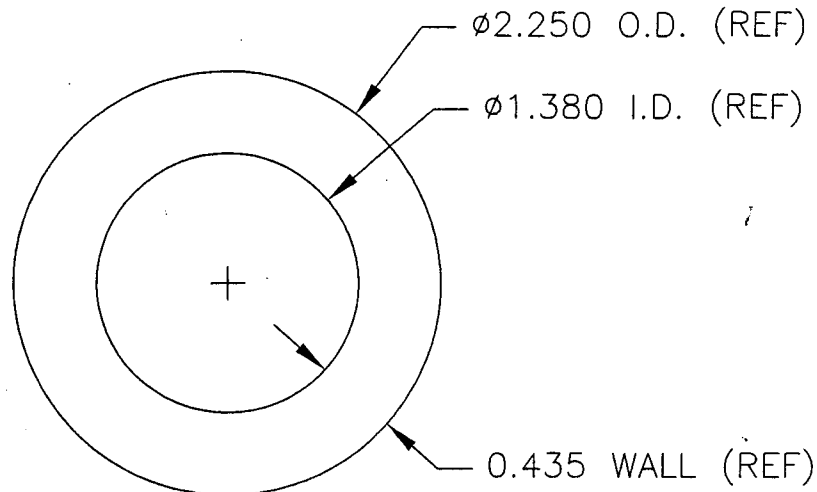


DESIGN CP	DRAWN BY CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6003	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. _____



NOTES

- 1) D6003-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 102" LONG TUBE: D6003-102

- 2) MATERIAL: 2.250 OD x 0.435 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.044 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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Job Costing Report

Dart Aerospace Ltd.
Hawkesbury

Aug 04, 2005
03:24 pm

Work Order No	:	0023967	Department Code:	
Project Name	:	D6003-102	Burden Flags	: NNNNNNN
Project For	:	WK543	WO Status	: Open
Work Order Type	:	Main	Invoice State	: Not Invoiced
Main WO Number	:		Invoice Date	:
House Part Number	:	D6003-102	Invoice Number	:
Description	:	Crosstube	Invoice Amount	: 0.00
Manufactured	:	Yes		
Amount Req'd	:	15	Order Entry No	:
Amount Done	:	0	OE Value	: 0.00
Start Date	:	08-04-05		
Est Finish Date	:	10-29-05	Est Margin	: 0.000%
Act Finish Date	:		Actual Margin	: 0.000%
Drawings Req'd	:	No		
Ok for Approval	:			
Approval Rec'd	:			

\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	: 0.00	0.00	0.00	0.00	0.00
Engineering Hours	: 0.00	0.00	0.00		
Engineering Cost	: 0.00	0.00	0.00	0.00	0.00
Production Hours	: 0.00	0.00	0.00		
Production Cost	: 0.00	0.00	0.00	0.00	0.00
Packaging Hours	: 0.00	0.00	0.00		
Packaging Cost	: 0.00	0.00	0.00	0.00	0.00
OverHead Hours	: 0.00	0.00	0.00		
OverHead Cost	: 0.00	0.00	0.00	0.00	0.00
CNC Hours	: 0.00	0.00	0.00		
CNC	: 0.00	0.00	0.00	0.00	0.00
Misc. Hours	: 0.00	0.00	0.00		
Misc.	: 0.00	0.00	0.00	0.00	0.00
Burden	: 0.00	0.00	0.00		
Total Cost	: 0.00	0.00	0.00		
Margin	: 0.000	0.000			
Selling Cost	: 0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done	: 0.00	0.00
Profits/(Loss)	: 0.00	0.00

**ALUnna****Abnahmeprüfzeugnis 3.1 - EN 10204:2004****Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004****Kunde:** Dart Aerospace Ltd.
Client:**Zeugnisnummer:** 721/05**Cert No. / No. du certificat:**1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada**Bestellnummer:** 2008430**Order No. / No. de commande****Produkt:** Röhre nahtlos gepresst
Product / Produit: Tubes seamless extruded Tubes file sur aligulle**Auftrag:** 15301/3**Our Reference/Notre Reference:****Spezifikation:** AMS - QQ - A - 200/11E, Spezifikation D6003
Specification:**Werkstoff:** 7075
Alloy/Alliage:**Zustand:** T 6511
Temper/État**Abmessung:** 2,250 INCH x 1,380 INCH x 0,435 INCH x 102,000 INCH
Size / Dimension: D6003-102**Kennzeichnung:** ALUnna-Cert No.721/05-7075-T6511-cast No.01402194-AMS-Qqa-200/11E-2.250" X 0.435"Wall-Heat no.85/09-
Marking/Marquage: Lot15301/3-1-P.O.2008430**Lieferung:** pcs. lbs
Delivered Material / Matériel délivré: 18 461**1. Chemische Analyse****Chemical Analysis / analyse chimique**

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
01402194	0,10	0,21	1,39	0,03	2,44	0,20	5,85	0,03	0,00	0,02			

Elements without indication < 0,01 %

2. Mechanische Eigenschaften**Mechanical Properties / Valeurs Mécaniques**

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0 ✓	66,0 ✓				
max.						
1	85,985	79,750	10,0		167	85/09 - 18 pcs.

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KroosD

Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001959 QM

ALUnna

Abnahmebeauftragter

27.09.2005

Jason Murdoch

From: David Shepherd [davids@dartaero.com]

Sent: November 9, 2005 9:28 AM

To: Jason Murdoch

Subject: Re: extrusion

The risk of corrosion is way down this time of year because the humidity is way down. Therefore, I don't see a problem holding off on the alodine for a few weeks until you have more time. With respect to the 412 Tri-beam stuff, I agree. I would just skip the alodining step and start machining it right away.

David

----- Original Message -----

From: Jason Murdoch

To: davids@dartaero.com

Sent: Tuesday, November 08, 2005 8:50 AM

Subject: extrusion

Hi Dave,

We have a bunch of x-tube mat'l that came in and I was wondering since it's coated in a lubricant if it should be alodined within a certain time frame or if at all ? it's on the w/o so I think it should be but time is very unavailable at the moment. But my biggest concern is the tri-beam ends mat'l. I think that can wait seeing as it's a work in progress and trial and error in bending.

jmurdoch@dartaero.com

Q.C. Inspector